JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A

Volume 70A Contents 2004

July 1, 2004
Volume 70A
Issue No. 1

1 Opinions and Trends in Biomaterials Education: Report of a 2003 Society for Biomaterials Survey
J. M. Karp, E. A. Friis, K. C. Dee, and H. Winet
Published online 20 May 2004

10 Enhancing the Biological Activity of Immobilized Osteopontin Using a Type-1 Collagen Affinity Coating
S. M. Martin, J. L. Schwartz, C. M. Giachelli, and B. D. Ratner
Published online 14 May 2004

20 Thermal Residual Stresses Near the Interface Between Plasma-Sprayed Hydroxyapatite Coating and Titanium Substrate: Finite Element Analysis and Synchrotron Radiation Measurements
B. Cofino, P. Fogarassy, P. Millet, and A. Lodini
Published online 10 May 2004

28 *In Vivo* Evaluation of a Novel Electrically Conductive Polypyrrole/Poly(D,L-lactide) Composite and Polypyrrole-Coated Poly(D,L-lactide-*co*-glycolide) Membranes
Z. Wang, C. Roberge, L. H. Dao, Y. Wan, G. Shi, M. Rouabhia, R. Guidoin, and Z. Zhang
Published online 17 May 2004

39 Impact of Collagen Structure on Matrix Trafficking by Human Fibroblasts
L. C. Abraham, J. Vorrasi, and D. L. Kaplan
Published online 6 May 2004

49 Polyethylene Glycol–Grafted Polystyrene Particles
F. Meng, G. H. M. Engbers, and J. Feijen
Published online 12 May 2004

59 Electrochemical Behavior of Different Preparations of Plasma-Sprayed Hydroxyapatite Coatings on Ti6Al4V Substrate
R. M. Souto, M. M. Lemus, and R. L. Reis
Published online 17 May 2004

66 A Low-Temperature Biomimetic Calcium Phosphate Surface Enhances Early Implant Fixation in a Rat Model
S. Kuroda, A. S. Virdi, P. Li, K. E. Healy, and D. R. Sumner
Published online 18 May 2004

74 Development of Photocrosslinkable Hyaluronic Acid-Polyethylene Glycol-Peptide Composite Hydrogels for Soft Tissue Engineering
J. B. Leach, K. A. Bivens, C. N. Collins, and C. E. Schmidt
Published online 13 May 2004

83 Viscoelastic Characterizations of Acellular Dermal Matrix (ADM) Preparations for Use as Injectable Implants
H.-O. Ho, Y.-T. Tsai, R.-N. Chen, and M.-T. Sheu
Published online 20 May 2004

97 Pegylated Polystyrene Particles as a Model System for Artificial Cells
F. Meng, G. H. M. Engbers, A. Gessner, R. H. Müller, and J. Feijen
Published online 20 May 2004

107 Hemocompatibility of Nitrogen-Doped, Hydrogen-Free Diamond-Like Carbon Prepared by Nitrogen Plasma Immersion Ion Implantation–Deposition
S. C. H. Kwok, P. Yang, J. Wang, X. Liu, and P. K. Chu
Published online 18 May 2004

115 Prolonged Ectopic Calcification Induced by BMP-2–Derived Synthetic Peptide
A. Saito, Y. Suzuki, S.-I. Ogata, C. Ohtsuki, and M. Tanihara
Published online 20 May 2004

122 Differential Expression of Osteogenic Factors Associated with Osteoinductivity of Human Osteosarcoma Cell Lines
Y. Yu, R. I. Harris, J.-L. Yang, H. C. Anderson, and W. R. Walsh
Published online 17 May 2004

129 Nanometer Surface Roughness Increases Select Osteoblast Adhesion on Carbon Nanofiber Compacts
R. L. Price, K. Ellison, K. M. Haberstroh, and T. J. Webster
Published online 18 May 2004

139 PLA and PLGA Microspheres of β-Galactosidase: Effect of Formulation Factors on Protein Antigenicity and Immunogenicity
N. Stivaktakis, K. Nikou, Z. Panagi, A. Beletsi, L. Leondiadis, and K. Avgoustakis
Published online 20 May 2004

149 Influence of Additive Hyaluronic Acid on the Lubricating Ability in the Temporomandibular Joint
N. Kawai, E. Tanaka, T. Takata, M. Miyauchi, M. Tanaka, M. Todoh, T. van Eijden, and K. Tanne
Published online 20 May 2004

Technical Note

154 Preparation of Poly(ethylene glycol)-*block*-Poly(caprolactone) Copolymers and Their Applications as Thermo-Sensitive Materials
M. S. Kim, K. S. Seo, G. Khang, S. H. Cho, and H. B. Lee
Published online 10 May 2004

August 1, 2004
Volume 70A
Issue No. 2

159 Novel Cell Patterning Using Microheater-Controlled Thermoresponsive Plasma Films
X. Cheng, Y. Wang, Y. Hanein, K. F. Böhringer, and B. D. Ratner
Published online 25 May 2004

169 Use of Sol–Gel-Derived Titania Coating for Direct Soft Tissue Attachment
S. Areva, H. Paldan, T. Peltola, T. Närhi, M. Jokinen, and M. Lindén
Published online 2 June 2004

179 Casual Cell Surface Remodeling Using Biocompatible Lipid-Poly(ethylene glycol)(*n*): Development of Stealth Cells and Monitoring of Cell Membrane Behavior in Serum-Supplemented Conditions
H. A. Chung, K. Kato, C. Itoh, S. Ohhashi, and T. Nagamune
Published online 1 June 2004

186 Environmental Influences on Endovascular Stent Platelet Reactivity: An *In Vitro* Comparison of Stainless Steel and Gold Surfaces
K. Kolandaivelu and E. R. Edelman
Published online 2 June 2004

194 Effect of Titanium Surface Topography on Macrophage Activation and Secretion of Proinflammatory Cytokines and Chemokines
A. K. Refai, M. Textor, D. M. Brunette, and J. D. Waterfield
Published online 7 June 2004

206 Effects of Titanium-Coated Micromachined Grooved Substrata on Orienting Layers of Osteoblast-Like Cells and Collagen Fibers in Culture
A. Khakbaznejad, B. Chehroudi, and D. M. Brunette
Published online 9 June 2004

219 Effective Accumulation of Poly(vinylpyrrolidone-*co*-vinyl laurate) into the Spleen
Y. Yoshioka, Y. Tsutsumi, Y. Mukai, H. Shibata, T. Okamoto, Y. Kaneda, S-i. Tsunoda, H. Kamada, K. Koizumi, Y. Yamamoto, Y. Mu, H. Kodaira, K. Sato-Kamada, S. Nakagawa, and T. Mayumi
Published online 8 June 2004

224 Preparation of Porcine Carotid Arteries for Vascular Tissue Engineering Applications
P. S. McFetridge, J. W. Daniel, T. Bodamyali, M. Horrocks, and J. B. Chaudhuri
Published online 4 June 2004

235 *In Vitro* Osteogenic Differentiation of Marrow Stromal Cells Encapsulated in Biodegradable Hydrogels
J. S. Temenoff, H. Park, E. Jabbari, T. L. Sheffield, R. G. LeBaron, C. G. Ambrose, and A. G. Mikos
Published online 25 May 2004

245 Oxidative Mechanisms of Poly(carbonate urethane) and Poly(ether urethane) Biodegradation: *In Vivo* and *in Vitro* Correlations
E. M. Christenson, J. M. Anderson, and A. Hiltner
Published online 2 June 2004

256 Biodegradable Radiation Delivery System Utilizing Glass Microspheres and Ethylenediaminetetraacetate Chelation Therapy
S. D. Conzone, M. M. Hall, D. E. Day, and R. F. Brown
Published online 8 June 2004

265 Endothelial Cell Adhesion on RGD-Containing Methacrylate Terpolymers
G. W. Fussell and S. L. Cooper
Published online 2 June 2004

274 Confocal Imaging of Biofilm Formation Process Using Fluoroprobed *Escherichia Coli* and Fluoro-Stained Exopolysaccharide
R. Maeyama, Y. Mizunoe, J. M. Anderson, M. Tanaka, and T. Matsuda
Published online 4 June 2004

283 Development of Biodegradable Poly(propylene fumarate)/Poly(lactic-*co*-glycolic acid) Blend Microspheres. I. Preparation and Characterization
D. H. R. Kempen, L. Lu, X. Zhu, C. Kim, E. Jabbari, W. J. A. Dhert, B. L. Currier, and M. J. Yaszemski
Published online 3 June 2004

293 Development of Biodegradable Poly(propylene fumarate)/Poly(lactic-*co*-glycolic acid) Blend Microspheres. II. Controlled Drug Release and Microsphere Degradation
D. H. R. Kempen, L. Lu, X. Zhu, C. Kim, E. Jabbari, W. J. A. Dhert, B. L. Currier, and M. J. Yaszemski
Published online 3 June 2004

303 Apatite Formation in the Reaction-Setting Mixture of $Ca(OH)_2$–KH_2PO_4 System
I. V. Fadeeva, S. M. Barinov, V. S. Komlev, D. A. Fedotov, J. Ďurišin, and L. Medvecky
Published online 4 June 2004

309 Poly(anhydride-Ester) Fibers: Role of Copolymer Composition on Hydrolytic Degradation and Mechanical Properties
K. Whitaker-Brothers and K. Uhrich
Published online 7 June 2004

319 Calcium-Phosphate-Hybridized Tendon Directly Promotes Regeneration of Tendon-Bone Insertion
H. Mutsuzaki, M. Sakane, H. Nakajima, A. Ito, S. Hattori, Y. Miyanaga, N. Ochiai, and J. Tanaka
Published online 8 June 2004

328 Hyaluronic Acid Grafting Mitigates Calcification of Glutaraldehyde-Fixed Bovine Pericardium
R. Ohri, S. K. Hahn, A. S. Hoffman, P. S. Stayton, and C. M. Giachelli
Published online 4 June 2004

335 Novel Mechanism of Tumorigenesis: Increased Transforming Growth Factor-β1 Suppresses the Expression of Connexin 43 in BALB/cJ Mice After Implantation of Poly-L-Lactic Acid
S. Ahmed and T. Tsuchiya
Published online 4 June 2004

341 Effect of Wollastonite Ceramics and Bioactive Glass on the Formation of a Bonelike Apatite Layer on a Cobalt Base Alloy
D. A. Cortés, A. Medina, J. C. Escobedo, S. Escobedo, and M. A. López
Published online 4 June 2004

347 Alterations of Cell Lipids by Metal Salts
G. S. Schuster and G. B. Caughman
Published online 8 June 2004

354 Structural Studies of Bioactivity in Sol–Gel-Derived Glasses by X-Ray Spectroscopy
L. J. Skipper, F. E. Sowrey, D. M. Pickup, V. Fitzgerald, R. Rashid, K. O. Drake, Z. Lin, P. Saravanapavan, L. L. Hench, M. E. Smith, and R. J. Newport
Published online 10 June 2004

September 1, 2004
Volume 70A
Issue No. 3

361 Microrough Implant Surface Topographies Increase Osteogenesis by Reducing Osteoclast Formation and Activity
S. Lossdörfer, Z. Schwartz, L. Wang, C. H. Lohmann, J. D. Turner, M. Wieland, D. L. Cochran, and B. D. Boyan
Published online 14 June 2004

370 Development of Multinuclear Giant Cells During The Degradation of Bioglass® Particles in Rabbits
M. Vogel, C. Voigt, C. Knabe, R. J. Radlanski, U. M. Gross, and C. M. Müller-Mai
Published online 1 July 2004

380 Macrophage Responses to Vascular Stent Coatings
M. Ball, A. O'Brien, F. Dolan, G. Abbas, and J. A. McLaughlin
Published online 28 June 2004

391 Patterns of Gene Expression in Rat Bone Marrow Stromal Cells Cultured on Titanium Alloy Discs of Different Roughness
R. M. Leven, A. S. Virdi, and D. R. Sumner
Published online 28 June 2004

402 Transforming Growth Factor-β3–loaded Microtextured Membranes for Skin Regeneration in Dermal Wounds
D. P. P. Vooijs, X. F. Walboomers, J. A. T. C. Parker, J. W. Von den Hoff, and J. A. Jansen
Published online 11 June 2004

412 Injectable Microparticle-Gel System for Prolonged and Localized Lidocaine Release. I. *In Vitro* Characterization
P.-C. Chen, Y. J. Park, L.-C. Chang, D. S. Kohane, R. H. Bartlett, R. Langer, and V. C. Yang
Published online 25 May 2004

420 Bovine Serum Albumin Conformational Changes Upon Adsorption on Titania and on Hydroxyapatite and Their Relation with Biomineralization
A. P. Serro, M. Bastos, J. C. Pessoa, and B. Saramago
Published online 11 June 2004

428 Ultrastructural Study of Mineralization of a Strontium-containing Hydroxyapatite (Sr-HA) Cement *In Vivo*
C. T. Wong, Q. Z. Chen, W. W. Lu, J. C. Y. Leong, W. K. Chan, K. M. C. Cheung, and K. D. K. Luk
Published online 17 June 2004

436 Electrostatic Interactions as a Predictor for Osteoblast Attachment to Biomaterials
I. O. Smith, M. J. Baumann, and L. R. McCabe
Published online 14 June 2004

442 Synthesis and Evaluation of Novel Bioactive Composite Starch/Bioactive Glass Microparticles
G. A. Silva, F. J. Costa, O. P. Coutinho, S. Radin, P. Ducheyne, and R. L. Reis
Published online 11 June 2004

450 A New Bone-inducing Biodegradable Porous β-Tricalcium Phosphate
N. Matsushita, H. Terai, T. Okada, K. Nozaki, H. Inoue, S. Miyamoto, and K. Takaoka
Published online 25 June 2004

459 Injectable Microparticle–Gel System for Prolonged and Localized Lidocaine Release. II. *In Vivo* Anesthetic Effects
P.-C. Chen, D. S. Kohane, Y. J. Park, R. H. Bartlett, R. Langer, and V. C. Yang
Published online 1 July 2004

467 Effect of Biphasic Calcium Phosphates on Drug Release and Biological and Mechanical Properties of Poly(ε-Caprolactone) Composite Membranes
H.-W. Kim, J. C. Knowles, and H.-E. Kim
Published online 2 July 2004

480 Local Properties of a Functionally Graded Interphase Between Cementum and Dentin
S. P. Ho, M. Balooch, S. J. Marshall, and G. W. Marshall
Published online 1 July 2004

490 Cyclic Mechanical Strain Alters Tissue-factor Activity in Rat Osteosarcoma Cells Cultured on a Titanium Substrate
J. G. Bledsoe, S. M. Slack, and V. T. Turitto
Published online 25 June 2004

497 Effect of the Difference of Bone Turnover on Peri-titanium Implant Osteogenesis in Ovariectomized Rats
A. Okamura, Y. Ayukawa, S. Iyama, and K. Koyano
Published online 25 June 2004

506 Solvent Effects on the Microstructure and Properties of 75/25 Poly(D,L-lactide-*co*-glycolide) Tissue Scaffolds
E. A. Sander, A. M. Alb, E. A. Nauman, W. F. Reed, and K. C Dee
Published online 28 June 2004

514 Fracture Toughness of Steel-fiber-reinforced Bone Cement
S. P. Kotha, C. Li, S. R. Schmid, and J. J. Mason
Published online 2 July 2004

September 15, 2004
Volume 70A
Issue No. 4

523 Alumina Hip Joints Characterized by Run-In Wear and Steady-State Wear to 14 Million Cycles in Hip-Simulator Model
H. Oonishi, I. C. Clarke, V. Good, H. Amino, and M. Ueno
Published online 27 July 2004

533 Effects of Adsorbed Proteins and Surface Chemistry on Foreign Body Giant Cell Formation, Tumor Necrosis Factor Alpha Release and Procoagulant Activity of Monocytes
M. Shen, I. Garcia, R. V. Maier, and T. A. Horbett
Published online 27 July 2004

542 Bone Formation and Bioresorption After Implantation of Injectable β-Tricalcium Phosphate Granules–Hyaluronate Complex in Rabbit Bone Defects
M. Chazono, T. Tanaka, H. Komaki, and K. Fujii
Published online 22 July 2004

550 Evaluation of *In Vivo* Biocompatibility and Biodegradation of Photocrosslinked Hyaluronate Hydrogels (HADgels)
K. Miyamoto, M. Sasaki, Y. Minamisawa, Y. Kurahashi, H. Kano, and S.-i. Ishikawa
Published online 22 July 2004

560 Encapsulating Chondrocytes in Copolymer Gels: Bimodal Degradation Kinetics Influence Cell Phenotype and Extracellular Matrix Development
M. A. Rice and K. S. Anseth
Published online 27 July 2004

569 Restoration of Function After Spinal Cord Transection Using a Collagen Bridge
S. Yoshii, M. Oka, M. Shima, A. Taniguchi, Y. Taki, and M. Akagi
Published online 27 July 2004

576 Three-Month, Zero-Order Piroxicam Release From Monodispersed Double-Walled Microspheres of Controlled Shell Thickness
C. Berkland, A. Cox, K. (Kevin) Kim, and D. W. Pack
Published online 27 July 2004

585 *In Vitro* Response of Osteoblast-Like and Odontoblast-Like Cells to Unsubstituted and Substituted Apatites
M. Inoue, R. Z. LeGeros, M. Inoue, H. Tsujigiwa, H. Nagatsuka, T. Yamamoto, and N. Nagai
Published online 27 July 2004

594 Regulation of the Collagen Phenotype Expression of Gamma-Irradiated Vascular Smooth Muscle Cells by Heparan Mimetics (RGTA)
C. Alexakis, C. Strup, P. Mestries, D. Mathé, J. P. Caruelle, D. Barritault, and P. Kern
Published online 20 July 2004

603 Fabrication of Biodegradable Elastomeric Scaffolds With Sub-Micron Morphologies
J. J. Stankus, J. Guan, and W. R. Wagner
Published online 20 July 2004

616 Author Index to Volume 70A

621 Subject Index to Volume 70A

I Volume 70A Contents